



City of Spring Lake Park
Garfield Pond Improvements

Oct 7, 2019
City Council Meeting





Agenda

1. Project History
2. Design Options
3. Design Elements
4. Project Impacts
5. Project Schedule

Project History

Flooding Issues

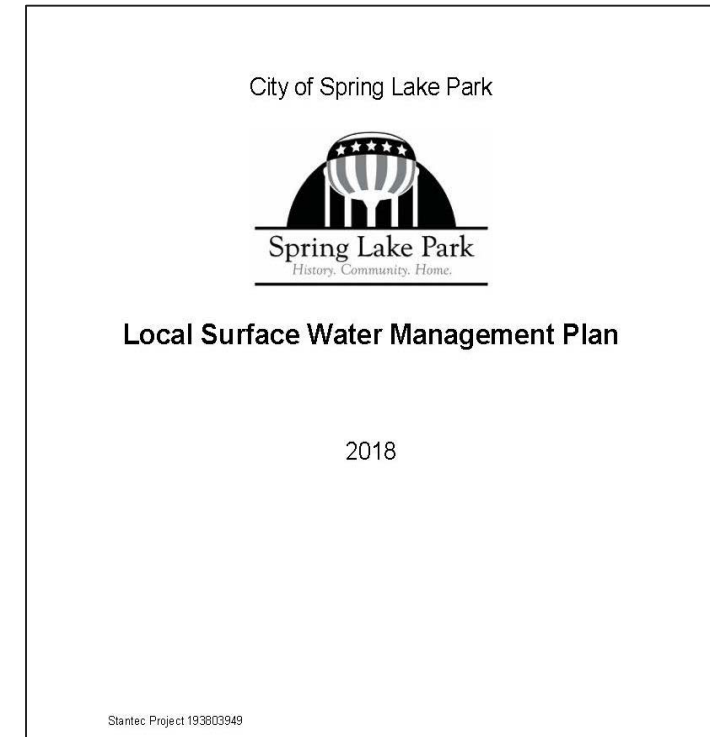
- History of street flooding on 81st Ave
- Impacts to homes on Garfield Street

Local Surface Water Management Plan (LSWMP)

- Analyzed known flooding areas
- Conceptual Design

Rice Creek Watershed District (RCWD) Funding

- \$267,146



Design Options

Increase flood storage

- Surface storage (Increase pond size)
 - Limited space – 0.9 acres need of additional space (area larger than City Hall parking lot)
- Underground storage
 - No feasible options

Increase outlet capacity

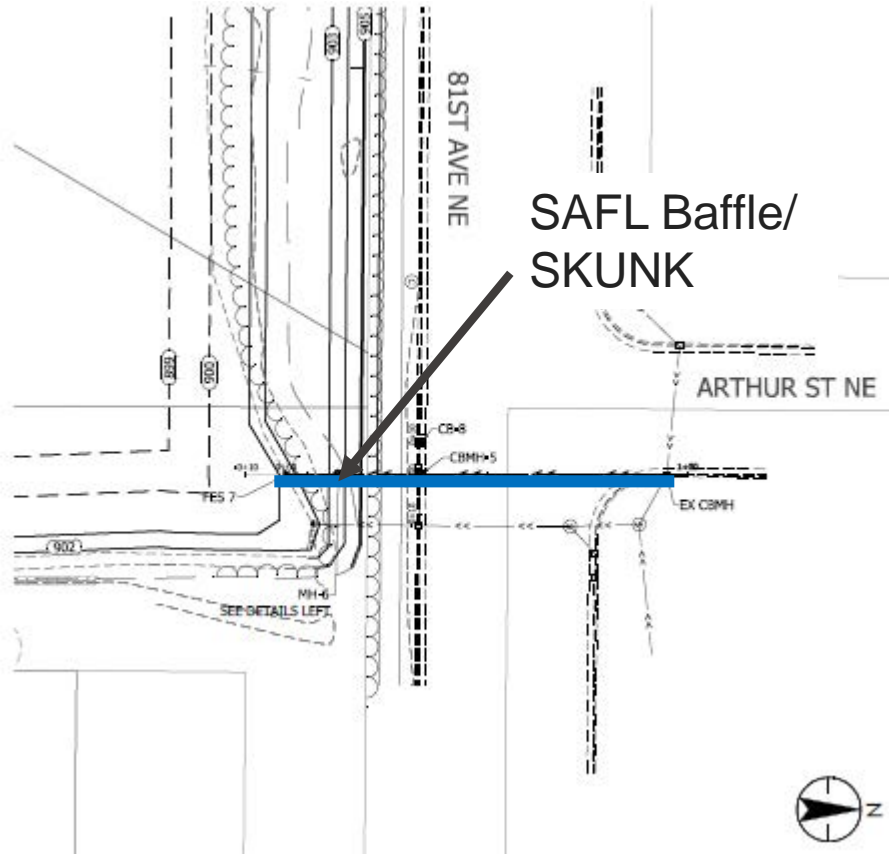
- Increase existing outlet pipe
 - Not feasible
- Add outlet pipe

Garfield Pond

1. 81st Ave Storm Sewer
2. Garfield Pond Grading & Dredging
3. Infiltration Bench
4. New Pond Outlet Pipe
5. Existing Pond Outlet
6. Spring Lake Outlet



#1: 81st Ave Storm Sewer



- Separate 81st Avenue runoff from Mobile Home Park runoff
- Treat 81st Avenue runoff before it flows into Garfield Pond
 - SAFL Baffle - sediments
 - SKUNK – floatables/trash

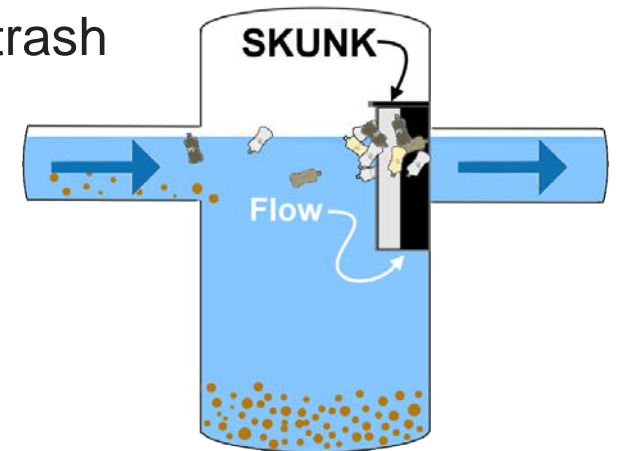


Image: Upstream Technologies

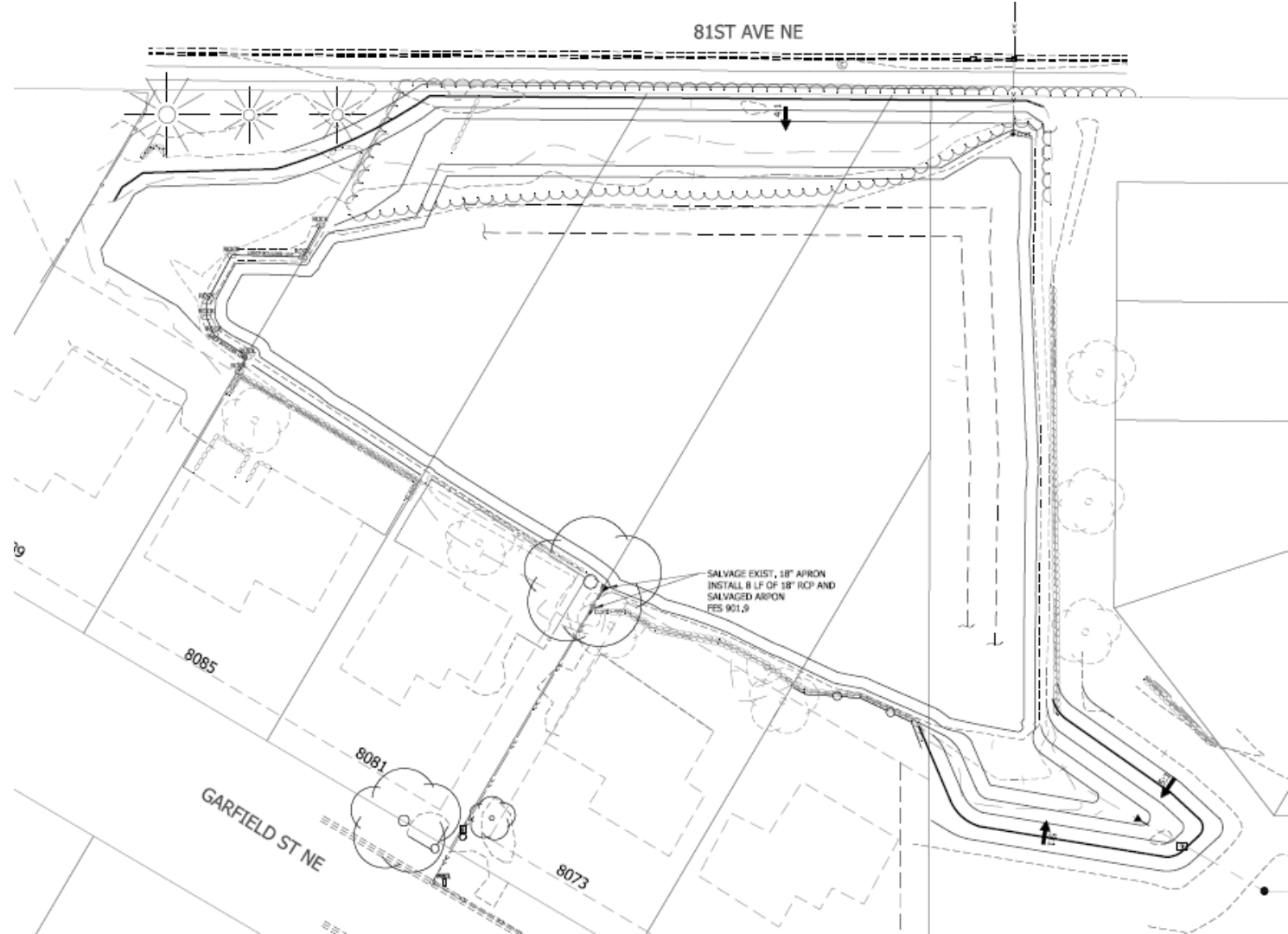
#2: Pond Dredging and Grading

Dredging

- Remove accumulated sediment
- Increase the water quality treatment capacity

Grading

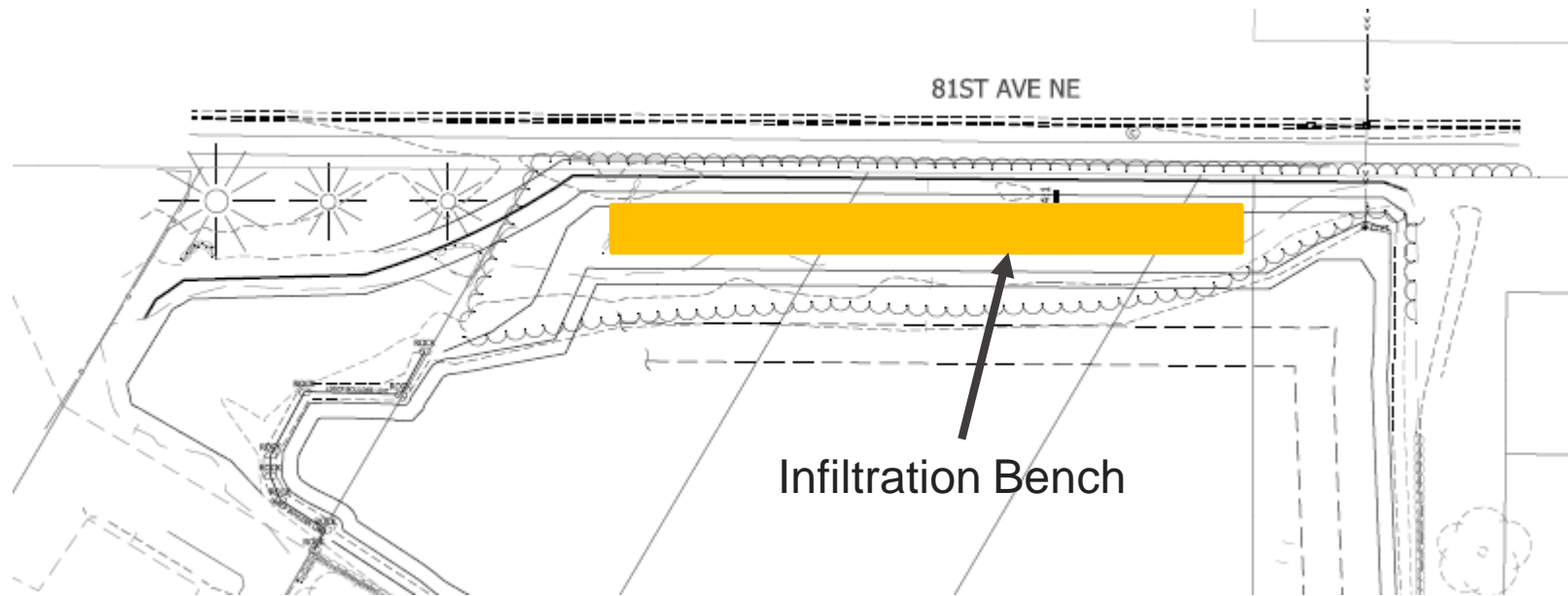
- Maximum flood storage



#3: Infiltration Bench

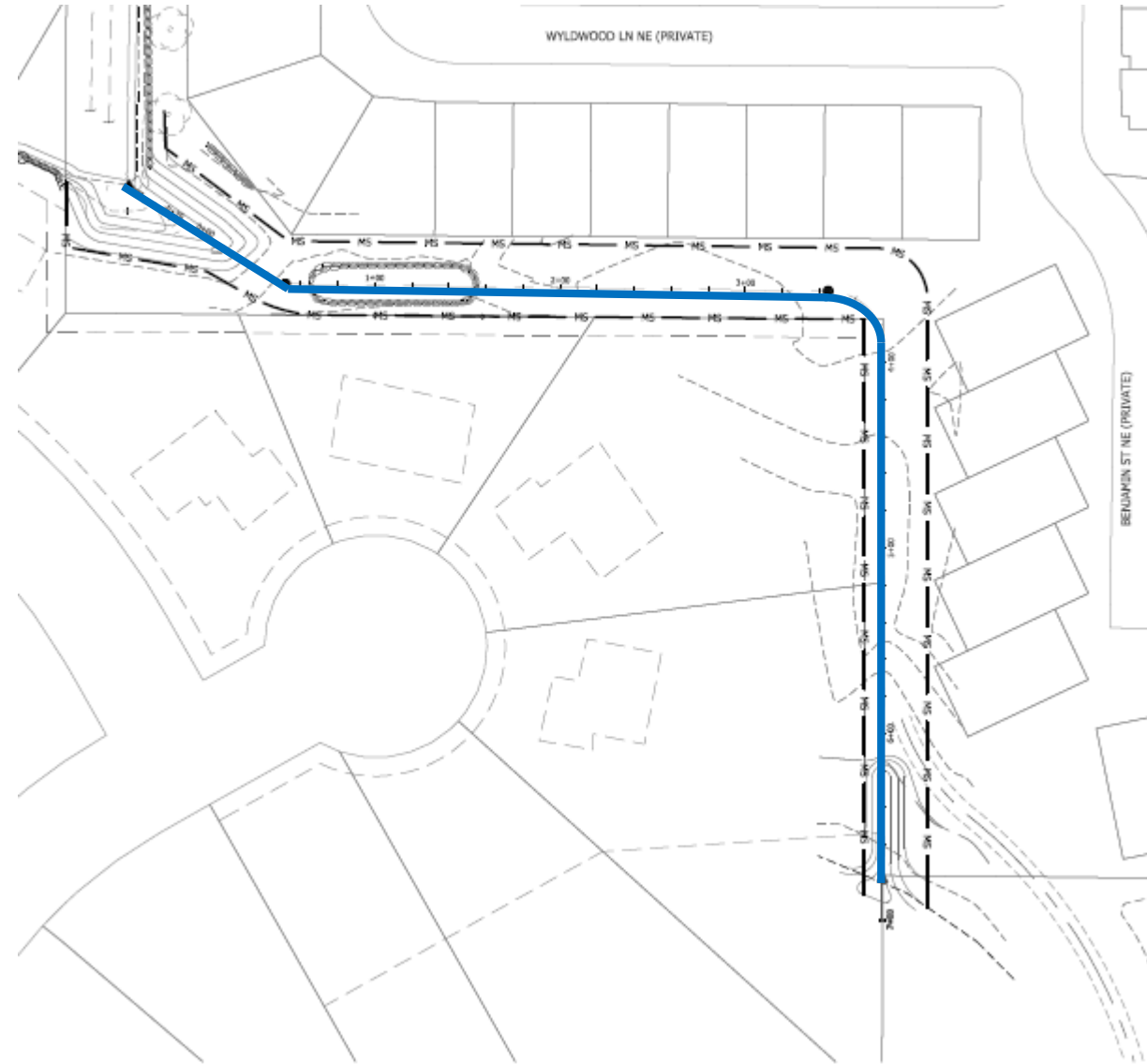
Additional water quality treatment

- Total Suspended Solids
- Total Phosphorus



#4/5: Pond Outlets

- Existing outlet
 - 18-inch concrete pipe to remain in place
- New outlet to Lake
 - Concrete pipe



#6: Spring Lake Outlet

- Existing 12-inch pipe
- 16-ft of pipe to be realigned
- Clear area around outlet



Project Impacts

How much are flood levels in Garfield Pond affected?

Rainfall (in)	Probability of Occurrence Each Year (%)	Change in High Water Level from Existing Conditions (ft)
2.5	100	0
2.8	50	0
3.5	20	-0.2
4.2	10	-0.6
5.3	4	-1.4
6.3	2	-1.7
7.4	1	-1.4

Project Impacts

How much runoff will go to the Lake?

Rainfall (inches)	Probability of Occurrence Each Year (%)	Percent of Runoff Flowing through Existing Outlet (%)	Percent of Runoff to Lake (%)
2.5	100	100	0
2.8	50	~100	~0
3.5	20	94	6
4.2	10	81	19
5.3	4	65	35
6.3	2	55	45
7.4	1	48	52

Project Impacts

What about water quality?

Water Quality Component	Treats Sediments	Treats Phosphorus	Treats Floatables
SAFL Baffle	X		
SKUNK			X
Pond Dredging	X	X	
Infiltration Bench	X	X	
Total Removal Efficiencies	84%	63%	~95% (81 st Ave)

Project Schedule

Council Approval	October 7, 2019
Open Bids	November 12, 2019
Council Award Bids	November 18, 2019
Begin Construction	November 25, 2019

Construction updates will be provided on the City website.
Contact information will be provided.

Thank You